Title (en)
WAVEGUIDE OPTICALLY PRE-AMPLIFIED DETECTOR WITH PASSBAND WAVELENGTH FILTERING

Title (de)
OPTISCH VORVERSTÄRKTER WELLENLEITERDETEKTOR MIT DURCHLASSBEREICHSWELLENLÄNGENFILTERUNG

Title (fr)
DÉTECTEUR PRÉ-AMPLIFIÉ OPTIQUEMENT À GUIDE D'ONDES À FILTRAGE DE LONGUEUR D'ONDE PASSE-BANDE

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Application
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Abstract (en)
[origin: WO2011069225A1] The invention describes an integrated-photonics arrangement, implementable in a multi-guide vertical integration (MGVI) structure composed from III-V semiconductors and grown in one epitaxial growth run, allowing for the integration of semiconductor optical amplifier (SOA) and PIN photodetector (PIN) structures within a common wavelength-designated waveguide of the plurality of the vertically integrated wavelength-designated waveguides forming the MGVI structure. The integration includes a wavelength filter integrated between the SOA and PIN to reduce noise within the PIN arising from ASE generated by the SOA. In exemplary embodiments of the invention, the wavelength filter is integrated into MGVI structure either within a common wavelength designated waveguide or within the wavelength- designated waveguide. Further in other embodiments the wavelength filter is provided by a thin- film filter abutting a facet of the integrated-photonics arrangement wherein optical signals are coupled by optical waveguides and/or additional optical elements such as a multimode interference device.

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